

WHAT IS CLAIMED IS:

1. A device for marking a particular tissue area within a human body to identify said particular tissue area for a later diagnostic or therapeutic procedure, comprising:

a discrete marker element;

an apparatus for remotely delivering said marker element from outside the human body to the particular tissue area using an aided visualization device;

said apparatus including a member having a distal region and a proximal region, said member being adapted to extend through said human body and to receive a deployment actuator connector which extends axially therealong, said connector comprising a distal portion which extends distally of the member and a proximal portion which extends proximally of the member, the proximal portion being attached to a deployment actuator and the distal portion being attached to said marker element, wherein actuation of said deployment actuator is transmitted from the proximal portion of the connector to the distal portion thereof to cause release and deployment of said marker element;

a predetermined failure point in the distal region of said deployment actuator connector, wherein once the distal region of said member is positioned at said selected tissue location, the deployment actuator may be actuated to pull the marker element against the distal region of said member, said member distal region being adapted to function as a forming die to cause the marker element to bend until it encounters a stop designed into said member distal region, such that the marker element is reconfigured to a desired shape, the proximal portion of said connector being adapted to be severed from the distal portion at said predetermined failure point upon the further actuation of said deployment actuator after abutment of the marker element against said stop, thereby releasing and implanting said marker element; and

said apparatus further comprising a cutting tip for piercing said human body;

wherein said marker element is adapted to become entirely implanted in said particular tissue area, such that no part of the marker element extends outside of said body.

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15. A device as recited in claim 1, and further comprising a plurality of marker elements adapted to assume a plurality of shapes, wherein each shape denotes a different selected tissue location or event.

16. A device as recited in claim 1, wherein said device is adapted to be employed in combination with a medical instrument which transports said device to said selected tissue location responsive to positional control by a guidance system.

17. A device for marking a particular tissue area within a human body to identify and particular tissue area for a later diagnostic or therapeutic procedure, comprising:

a discrete marker element;

an apparatus for remotely delivering said marker element from outside the human body to the particular tissue area, using an aided visualization device;

said apparatus including a member having a distal region and a proximal region, said member being adapted to extend through said human body and to receive a deployment actuator connector which extends axially therealong, said connector comprising a distal portion which extends distally of the member and a proximal portion which extends proximally of the member, the proximal portion being attached to a deployment actuator and the distal portion being attached to said marker element, wherein actuation of said deployment actuator is transmitted from the proximal portion of the connector to the distal portion thereof to cause release and deployment of said marker element;

wherein said device is adapted to be employed in combination with a medical instrument which transports said device to said selected tissue location responsive to positional control by a guidance system;

said medical instrument drawing a vacuum to isolate and retain tissue at the selected location and said marking device being adapted to deploy said marker element into said retained tissue.

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35. A device as recited in claim 1, wherein the marker element has a width of less than 0.1 inches.

36. A device as recited in claim 1, wherein the marker element has a width at its distal end within a range of .035-.045 inches.

37. A device as recited in claim 1, wherein the particular tissue area comprises a lesion within the body, and no part of the marker element extends outside of said lesion.

43. A device as recited in Claim 38, wherein said device is adapted to be employed in combination with a medical instrument which transports said device to said selected tissue location responsive to positional control by a guidance system.

44. A device for marking a particular tissue area within a human body to identify said particular tissue area from a later diagnostic or therapeutic procedure, comprising:

a discrete marker element; and

an apparatus for remotely delivering said marker element from outside the human body to the particular tissue area, using an aided visualization device, the apparatus including a member having a distal region and a proximal region, said member being adapted to extend into said human body, wherein said distal region is adapted to retain and deploy said marker element and said proximal region is linked to said distal region, so that predetermined marker deployment functions may be communicated from said proximal region to said distal region;

said member being adapted to receive a deployment actuator connector which extends axially therealong, said connector comprising a distal portion which extends distally of the member and a proximal portion which extends proximally of the member, said proximal portion being attached to a deployment actuator and said distal portion being attached to said marker element, wherein actuation of said deployment actuator is transmitted from the proximal portion of the connector to the distal portion thereof to cause release and deployment of said marker element;

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a predetermined failure point in the distal region of said deployment actuator connector, wherein once the distal region of said member is positioned at said selected tissue location, the deployment actuator may be actuated to pull the marker element against the distal region of said member, said member distal region being adapted to function as a forming die to cause the marker element to bend until it encounters a stop designed into said member distal region, such that the marker element is reconfigured to a desired shape, the proximal portion of said connecting means being adapted to be severed from the distal portion at said predetermined failure point upon the further actuation of said deployment actuator after abutment of the marker element against said stop, thereby releasing and implanting said marker element;

wherein said marker element is adapted to become entirely implanted in said particular tissue area, such that no part of the marker element extends outside of said body.

45. A device as recited in Claim 16, wherein said medical instrument draws a vacuum to isolate and retain tissue at the selected location and said marking device is adapted to deploy said marker element into said retained tissue.

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